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EXAMINER	
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ART UNIT	PAPER NUMBER
3623	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/707,974	DENTON ET AL.	
	Examiner	Art Unit	
	Neil R. Kardos	3623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 October 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-27* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-27* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *10/16/08*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

This is a **FINAL** Office action on the merits in response to communications filed October 16, 2008. Claims 1-27 have been amended. Currently, claims 1-27 are pending and have been examined.

Response to Amendment

Applicant's amendments to the claims are sufficient to overcome the claim objections set forth in the previous Office action.

Applicant's amendments to the claims are sufficient to overcome the rejection under § 112 set forth in the previous Office action. However, Applicant's amendments have introduced new § 112 rejections, which are set forth below.

Applicant's amendments to the claims are NOT sufficient to overcome the rejection under § 101 set forth in the previous Office action. This rejections has been reasserted below.

Applicant's amendments to the claims are sufficient to overcome the § 102 and § 103 rejections set forth in the previous Office action. New prior art has been applied below; this newly applied prior art is necessitated by Applicant's amendments.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1, 8, 15, and 21: Claims 1, 8, 15, and 21 recite sequential steps of (1) a first rescheduling to move purchase order receipts to an earlier time period, (2) solving core production planning system equations, and (3) a second rescheduling to move purchase order receipts to a later time period. It is not clear what is being done in the second step of solving core production planning systems equations and how this step is different from the first rescheduling (to earlier times) or the second rescheduling (to later times). The purpose of solving production planning equations (e.g. linear programming) is to reschedule items planned for production to earlier or later times to achieve the optimal production plan (e.g. to minimize earliness or lateness of delivery to maximize customer satisfaction while minimizing costs). With this purpose in mind, it is not clear how the step of solving production planning equations is separate and distinct from the steps of rescheduling to earlier and later time periods. It is the examiner's position that the claimed invention involves optimizing the scheduled timing of items to be produced within a desired window having an earliest and latest possible time. Clarification is required.

Claims 2-7, 9-14, 16-20, and 22-27: Dependent claims 2-7, 9-14, 16-20, and 22-27 are rejected for failing to remedy the deficiencies of the claims from which they depend.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-20 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claims 1, 8, and 15: Claims 1, 8, and 15 are directed toward the statutory category of a process. In order for a claimed process to be patentable subject matter under 35 U.S.C. § 101, it must either: (1) be tied to a particular machine, or (2) transform a particular article to a different state or thing. *See Diamond v. Diehr*, 450 U.S. 175, 184 (1981); *Parker v. Flook*, 437 U.S. 584, 588 n.9 (1978); *Gottschalk v. Benson*, 409 U.S. 63, 70 (1972). If neither of these requirements is met by the claim, the method/process is not patentable subject matter under § 101. Thus, to qualify as a statutory process under § 101, the claim should positively recite the machine to which it is tied (e.g. by identifying the apparatus that accomplishes the method steps), or positively recite the subject matter that is being transformed (e.g. by identifying the material that is being changed to a different state). Nominal recitations of structure in an otherwise ineligible method fail to make the method a statutory process. *See Benson*, 409 U.S. at 71-72. Thus, incidental physical limitations such as insignificant extra-solution activity and field of use limitations are not sufficient to convert an otherwise ineligible process into a statutory one.

Here, the claimed process fails to meet the above requirements for patentability under § 101 because it is not tied to a particular machine and does not transform underlying subject matter. Applicant has attempted to overcome the rejection in two ways. First, Applicant has amended the claims to recite a computer-implemented method in the preamble. The preamble is

not generally given patentable weight and here it amounts to an incidental physical limitation in an insignificant extra-solution activity. Second, Applicant has created a file that is "transformed." However, the machine-or-transformation test must transform a particular article. Here, the claimed invention merely transforms data, and thus does not satisfy the transformation prong of the test. Because the claimed invention does not satisfy either prong of the machine-or-transformation test, it is not patentable under § 101.

Claims 2-7, 9-14, and 16-20: Dependent claims 2-7, 9-14, and 16-20 are rejected for failing to remedy the deficiencies of the claims from which they depend.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-4, 7-9, 13, 16, 20-22 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wang, "Earliness/Tardiness Production Planning Approaches with Due-Window for Manufacturing Systems."

Claim 1: Wang discloses a method for determining a production plan, said method comprising:

- receiving a first file comprising purchase order receipts, said purchase order receipts being defined as line items on purchase orders (see page 825,

"Introduction", ¶ 3, disclosing receiving orders from customers; page 826, sections 2.1 and 2.1.1, disclosing order quantity of a product; page 831, section 2.3, "Algorithm LP", Step 1, disclosing an input file; page 833, ¶ 1);

- performing a first rescheduling process so that said purchase order receipts are rescheduled to be received by a plant during earlier time periods than initially specified (see page 825, "Introduction", ¶ 3, disclosing rescheduling to produce earlier than a due date; page 826, sections 2.1 and 2.1.1, disclosing the earliest starting time and delivery time required by an order; page 834, equation 29 and associated text, disclosing the earliest starting time of products; figure 1);
- after said performing of said first rescheduling process, solving core production planning system equations using rescheduled purchase order receipts from said first rescheduling process (see at least equations 26-30; see Wang generally, disclosing linear programming);
- after said solving, performing a second rescheduling process so that said rescheduled purchase order receipts from said first rescheduling process are rescheduled to be received by said plant during later time periods than specified during said first rescheduling process (see page 825, "Introduction", ¶ 3, disclosing rescheduling to produce later than a due date; page 826, sections 2.1 and 2.1.1, disclosing the latest delivery time required by an order; figure 1);
- outputting a second file based on said solving and said rescheduling process (see various equations, especially 26-29 and associated text, which disclose getting an output result from the linear programming).

Wang does not explicitly disclose performing the disclosed method on a computer. Examiner takes Official Notice that it was well-known in the art at the time the invention was made to automate processes using a computer. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to automate the processes of Wang by performing them on a computer. One of ordinary skill in the art would have been motivated to do so for the benefit of efficiency. *See in re Venner*, 262 F.2d 91, 95, 120 USPQ 193, 194 (CCPA 1958).

Claim 2: Wang discloses wherein said first rescheduling process is based upon a field that indicates whether a receipt may be rescheduled to an earlier point in time (see figure 1; page 834, equation 29 and associated text; page 831: "Algorithm LP", disclosing whether or not delayed orders are allowed).

Claim 3: Wang discloses wherein said first rescheduling process is based upon frozen zone rules (see figure 1; page 831: "Algorithm LP", disclosing whether or not delayed orders are allowed).

Claim 4: Wang discloses wherein said second rescheduling process is based upon one of a date of need, frozen zone rules, and date tolerances (see at least figure 1).

Claim 7: Wang disclose recomputing ending inventory levels to reflect said second rescheduling process (see page 826, section 2.1, ¶ 3, disclosing an earliness penalty associated with inventory carrying costs; see also equation 6 on page 828, showing computing a value for inventory carrying cost).

Claims 8-9: Claims 8-9 are substantially similar to claims 1-2 and are rejected under similar rationale.

Claim 13: Claim 13 is substantially similar to claim 7 and is rejected under similar rationale.

Claims 16 and 20: Claims 16 and 20 are substantially similar to claims 9 and 13 and are rejected under similar rationale.

Claims 21-22 and 26: Claims 21-22 and 26 are substantially similar to claims 8-9 and 13 and are rejected under similar rationale.

Claims 5-6, 10-12, 14-15, 17-19, 23-25, and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wang in view of Lilly (US 6,088,626).

Claims 5-6: Wang does not explicitly disclose sorting purchase order receipts by arrival dates, quantity, and flexibility. Lilly discloses these limitations (see col. 12: ln. 65 through col. 13: ln. 3; col. 9-14; col. 9: ln. 14-38). It would have been obvious to one of ordinary skill in the

art at the time the invention was made to sort the products of Wang according to the sorting methods of Lilly. One of ordinary skill in the art would have been motivated to do so for the benefit of efficiencies gained through sorting.

Claim 10: Claim 10 is substantially similar to claims 5-6 and is rejected under similar rationale. Claim 10 also discloses sorting into classes and subclasses, which Wang does not explicitly disclose. Examiner takes Official Notice that this is a well-known sorting technique. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the different sorts according to well-known methods in order to obtain subclasses of sorting groups. This combination of known elements retains the functionality of the separate elements and produces a result that would be predictable to one of ordinary skill in the art.

Examiner notes that Applicant has failed to traverse Examiner's Official Notice as to the above limitation, which was originally set forth in the previous Office action. Therefore, Examiner's findings of Official Notice are taken to be admitted prior art. See MPEP § 2144.03 (C).

Claim 11: Wang does not explicitly disclose this claim. Lilly discloses wherein said post-processing rescheduling process reschedules the timing of each of said purchase order receipts into the latest time period before the corresponding inventory level would be depleted to zero (see col. 11: ln. 13-45; col. 9-14). It would have been obvious to one of ordinary skill in the art at the time the invention was made to configure the linear programs of Wang to reschedule

the timing of purchase orders into the latest time period before inventory reaches zero as disclosed by Lilly. One of ordinary skill in the art would have been motivated to do so for the benefit of efficiencies gained through just-in-time manufacturing.

Claim 12: Wang and Lilly do not explicitly disclose wherein if a purchase order receipt timing can be extended beyond the latest date of the planning horizon of said linear programming production planning system, said purchase order receipt is eliminated.

However, Examiner takes Official Notice that it is old and well-known to exclude data that falls outside of a planning period. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to exclude data falling outside of the planning horizon of Lilly. This combination of known elements retains the functionality of the separate elements and produces a result that would be predictable to one of ordinary skill in the art.

Examiner notes that Applicant has failed to traverse Examiner's Official Notice as to the above limitation, which was originally set forth in the previous Office action. Therefore, Examiner's findings of Official Notice are taken to be admitted prior art. See MPEP § 2144.03 (C).

Claim 14: Wang does not explicitly disclose this claim. Lilly discloses wherein said post-processing rescheduling process limits rescheduling of said purchase order receipts to comply with contractual obligations and to avoid trivial rescheduling (see col. 5: ln. 65 through col. 6: ln. 10; col. 9-14). It would have been obvious to one of ordinary skill in the art at the time the invention was made to configure the linear programs of Wang to comply with contractual

obligations and avoid trivial rescheduling. One of ordinary skill in the art would have been motivated to do so for the benefit of efficiency and customer satisfaction, as well as reduced costs.

Claim 15: Claim 15 is substantially similar to previously rejected claims (in particular, claims 1, 8, and 10) and is rejected under similar rationale.

Claims 17-19: Claims 17-19 are substantially similar to claims 10-12 and are rejected under similar rationale.

Claims 23-25 and 27: Claims 23-25 and 27 are substantially similar to claims 10-12 and 14 and are rejected under similar rationale.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Fang, Jian and Yugeng Xi. "A Rolling Horizon Job Shop Rescheduling Strategy in the Dynamic Environment." International Journal of Advanced Manufacturing Technology, 13 (1997), pp. 227-232.
- Potts, C. N. and L. N. Van Wassenhove. "Single Machine Scheduling to Minimize Total Late Work." Operations Reaserch, 40:3 (1992), pp. 586-595.

- Wang, Wei, et al. "JIT Production Planning Approach with Fuzzy Due Date for OKP Manufacturing Systems." International Journal of Production Economics, 58 (1999), pp. 209-215.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Neil R. Kardos whose telephone number is (571) 270-3443. The examiner can normally be reached on Monday through Friday from 9 am to 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Beth Boswell can be reached on (571) 272-6737. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Neil R. Kardos
Examiner
Art Unit 3623

NRK
1/14/09
/Jonathan G. Sterrett/
Primary Examiner, Art Unit 3623